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(12) REQUEST FOR PATENT OF INVENTION

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(54) Deobstruction apparatus, more particularly device for aspirating mucous.

(57) The invention is in reference to a deobstruction apparatus of the "mucous aspirator" type, that permits elimination of all secretions forming at the level of the upper airways, or in any aperture of the organism, by means of a flexible tube, non traumatizing, connected to a dismountable depressurizing instrument of the water pump type.

It consists of :

- a water pump made up of a body 1, a small diameter nozzle 7 for the passage of the motor fluid and a dismountable connection 2 grooved in its upper part.
- a connecting device to the fluid source made up of a coupler of flexible plastic material 3, a tightening collar 5 and various rings 4 of flexible plastic material permitting the tightest possible connection to any faucet.
- a variable tube of flexible matter 6 permitting a non traumatizing removal of mucous, connected to the body 1 by means of a tight fit.

DESCRIPTION

The present invention is in reference to deobstruction apparatus of the "mucous aspirator" type that permit elimination of all secretions forming at the level of the upper airways, or in any opening of the organism, by means of a flexible tube, non traumatizing, connected to a depressurizing instrument of the water pump type.

The apparatus existing today do not appear under the same form as the present invention. They are numerous and the conception is very variable. The best known are :

- apparatus whose aspiration is caused by a motor that actions a membrane ;
- apparatus whose aspiration is caused by the depression of a bulb.

The first devices, although very appreciable from the viewpoint of mucous aspiration, if they are to be used in a fixed place, are awkward to handle because of their weight and their bulk, for home or ambulatory use. Their lack of handiness, their cumbersome appearance and some technical knowledge they require, are all negative aspects of their use.

On the other hand, the latter are much more primitive and feed more, but the efficacy proves to be of little satisfaction.

The device that we propose, called NOBVA, through its capacity for action and operation, for its effectiveness and lack of risks for the subject, permits making it a very appreciable tool for urgent first-aid. Thus, this apparatus could see its field of application expand to various first-aid interventions, because it combines speed, effectiveness, trustworthiness and simplicity of use.

Figure 1 represents, in cross-section, the NOBVA device as invented.

Figure 2 represents, in cross-section, a variation of this device when removal is required.

The device shown in figure 1 comprises three elements :

- a water pump 85 mm long, dismountable into two parts for possible cleaning,
- a system for connection to the pressure motor source,
- a flexible tube allowing distant aspiration.

The water pump is made up of a body (1) of a diameter below 20 mm, with a lateral aspiration tube and a evacuation tube in the shape of a truncated cone. On the body is tightly screwed an injector comprising a small diameter nozzle (7) for the passage of the motor fluid, and a connection grooved in its upper part. The body and injector are cast in plastic material by injection.

Connection to the motor fluid source is accomplished through the intermediary of a coupler (3) of flexible plastic material, 50 mm long, comprising a tightening collar (5) that permits fixing said coupler onto any faucet. The internal diameter of this coupler can be modified by one or more rings (4) in flexible plastic material, permitting the tightest possible connection to the faucet.

The lateral tube of the water pump is such that it permits a tight fit, without any other fixing systems, of a tube (6) in flexible plastic material, 5 mm in diameter, of variable length, allowing aspiration at a larger or smaller distance from the energy source. In the apparatus described, the length of the flexible tube is 1.50.

The weight of the apparatus is about 80 g.

The device represented by figure 2 has also a sterile flask (8) located between the water pump and the removal point, to collect the aspired secretions.

The low encumbrance and insignificant weight of this apparatus therefore allows its use, as aspirator of mucous or other liquids, under any conditions whatsoever. It suffices to have nearby a flow source of fluid slightly under pressure (water, compressed gas), either in a fixed installation or in a portable installation. It does not require, either, any particular technical knowledge. Finally, it does not present any danger for the person using it or for the subject on whom aspiration is performed. (The possible increase in pressure or in flow of the motor liquid does not in any case cause a traumatic aspiration).

Applications of the NOBVA device can be multiple, but its first objective is to be used as a nasal mucous aspirator for little children under 2 years of age whose nose blowing is ineffective, and whose secretions, often purulent, are the source of repeated rhinopharyngeal infections.

CLAIMS

1) The deobstruction apparatus, characterized by being composed of a dismountable two-part water pump, a system of connection (3) to the motor pressure source with a tightening collar (5), a flexible tube of variable length (6) permitting distant aspiration.

The water pump is composed of a body (1), with an aspiration tube and an evacuation tube in the form of a truncated cone. On the body is tightly screwed the injector made up of a small diameter nozzle (7) and a connection grooved in its upper part.

2) Application of the device under claim 1 to the aspiration of nasal mucous in little children, characterized by the fact that it is composed of a water pump, dismountable for possible cleaning, attached tightly to a source of liquid and connected to a flexible plasticized tube with 5 mm outside diameter that can be introduced into nasal openings without traumatizing the nasal mucous membrane.

3) Application of the device under claim 1 to the deobstruction and/or the aspiration in other natural openings (throat, ears, trachea, bronchus, vagina, operatory wounds) without any technical modification.

4) Device under claim 1, characterized by the possible interposition, on the aspiration tube, of a sterile flask (8) allowing collection of the aspired secretions for microscopic, chemical or bacteriological examination.

5) Application of the device under any one of the foregoing claims, to urgent first aid by its presence either in the fixed or mobile reanimation units, or in the bags of general or specialized doctors, the motor source then being a bottle of oxygen or compressed gas used also for reanimation.

6) Application of the device under any one of the foregoing claims to the aspiration of viscous liquids, of concentrated suspensions and of more or less toxic products for non medical use : industries, laboratories, companies....

7) Application of the device under claim 6 to the deobstruction and/or aspiration of ducts, drains, etc..., through the technical possibility of manufacturing a larger apparatus based on the same principle, as it can be branched onto a fire plug or any other source of motor pressure.